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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,729	11/09/2001	Wen-Shi Huang	0941-0361P-SP	6009

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EXAMINER

MULLINS, BURTON S

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,729

Applicant(s)

HUANG ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-8, 10-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,945,765) in view of Miyazawa et al. (US 6,166,470). Chen teaches a miniature motor structure, comprising a stator 2, further comprising: a first coil seat 4, including a first bottom plate 40, a plurality of first outer teeth 45, a plurality of first inner teeth 43; a coil 3, formed in the first coil seat; a second coil seat 5, including a second bottom plate 50, a plurality of second outer teeth 55, a plurality of second inner teeth 53, said second coil seat formed on the first coil seat, each of said second outer teeth 55 interposed between said adjacent first outer teeth 45, each of said second inner teeth 53 interposed between said adjacent first inner teeth 43; and a shaft 61, coupled to said stator (Fig.5).

Chen differs only in that the rotor 6 (Fig.5) surrounding the stator does not comprise a "circular magnet" per se.

Mizayawa teaches a brushless motor with an inner stator and outer rotor including ring or "circular" magnet 5 (Figs.1-2). The magnet 5 operates together with the energized stator poles to produce torque.

It would have been obvious to one having ordinary skill in the art to provide a circular magnet per Mizayawa on the rotor of Chen since the magnet rotor would have been necessary to produce motor torque.

Regarding claims 2-3, note first and second "central openings" 41 and 51 in Chen which the respective teeth 43 and 53 surround (Fig.3).

Regarding claims 5 and 14, the first and second coil seats are made of silicon steel in Chen (c.2, line 12).

Regarding claims 6 and 15, the coil 3 is positioned in a space defined by the first and second coil seats (Fig.3).

Regarding claims 7-8 and 16-17, the coil 3 in Chen is inherently preformed and is "wound around a post consisting of said first coil seat and said second coil seat" (Fig.3).

Regarding claims 10-11 and 19-20, the first inner teeth and said second inner teeth in both Chen and Miyazawa each comprise an arc, with a circumferential gap between the first and second inner teeth 43 and 53 (Fig.3).

3. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen and Miyazawa as applied to claims 1 and 12 above, and further in view of Hasebe (US 4,899,075). As best understood, Chen and Miyazawa do not disclose a "cut corner" on the first and second inner teeth.

Hasebe teaches a DC brushless motor with a permanent magnet and stator poles having a "cut corner". Each salient pole has a notched portion in one corner (Fig.3). This prevents the phase angle position of the zero torque level with respect to the fundamental wave torque from coinciding with the zero torque level of the second higher harmonic, and thus starting of the motor becomes easy (c.4, lines 30-40).

It would have been obvious to one having ordinary skill at the time of the invention to modify Chen and Miyazawa and provide notched poles with "cut corners" per Hasebe since this would improve starting of the motor.

Response to Arguments

4. Applicant's arguments in the amendment filed March 10th, 2003 have been considered but are not persuasive. Applicant argues that Chen's inner and outer insert sheets, i.e. teeth, are not "interposed between" each other. However, the examiner notes that Chen at c.2, lines 37-46, says "the insert sheets 43, 53 of each of the plates 4, 5 are staggered in such a manner that each of the insert sheets 43, 53 of one of the plates 4, 5 is located between an adjacent pair of the insert sheets 43, 53 of the other one of the plates 4, 5. Similarly, the exciting sheets 45, 55 of the plates 4, 5 are staggered in such a manner that each of the exciting sheets 45, 55 of one of the plates 4, 5 is located circumferentially between an adjacent pair of the exciting sheets 45, 55 of the other one of the plates 4, 5" (emphasis added). The language "between" and "circumferentially between" used by Chen is equivalent to the language "interposed between" used by applicant in the claims. Note also that in Chen, "[e]ach of the grooves 311 has an axial depth that is larger than half the distance between the two end surfaces of the sheave" (c.2, lines 19-21). Thus, the teeth 43/53 filling these grooves would be "interposed between" each other.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner's supervisor, Nestor Ramirez, can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
March 21, 2003